

OCCUPATIONAL ANALYSES SERIES

Motor Vehicle Body Repairer (Metal and Paint)



1997



Human Resources
Development Canada

Développement des
ressources humaines Canada

Canada

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Occupational Analyses Series

Motor Vehicle Body Repairer (Metal and Paint)

1997

**Standards, Planning
and Analysis**

**Normes, planification
et analyse**

**Human Resources
Partnerships Directorate**

**Direction des partenariats
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The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this occupational analysis as the national standard for the occupation of motor vehicle body repairer (metal and paint).

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This analysis was prepared by the Human Resources Partnerships Directorate. The planning, coordination and processing of the analysis were undertaken by staff members of the Standards, Planning and Analysis Division.

OTHER RELATED OCCUPATIONAL TITLES

This analysis covers tasks performed by a motor vehicle body repairer (metal and paint) whose occupational title has been identified by some provinces and territories of Canada under the following names:

Auto Body and Collision Damage
Auto Body Technician
Automotive Collision Repair Technician
Motor Vehicle Body (Repairer)
Motor Vehicle Body Repair
Motor Vehicle Body Repairer
Motor Vehicle Repair (Body)
Motor Vehicle Repairer

LIST OF PUBLISHED OCCUPATIONAL ANALYSES *

TITLE	NOC** Code
Aquaculture Technician (1977)	2221
Arts Administrator (1989)	0114
Automotive Painter (1995)	7322
Automotive Service Technician (1995)	7321
Automotive Technician - Automatic Transmission (1990)	7321
Automotive Technician - Electrical/Electronics (1992)	7321
Automotive Technician - Engine Repair and Fuel Systems (1989)	7321
Automotive Technician - Front-End (1989)	7321
Automotive Technician - Manual Transmission, Driveline and Brakes (1990)	7321
Aviation Machinist (1994)	7331
Baker (1991)	6252
Blaster (Surface) (1987)	7372
Boilermaker (1994)	7262
Bricklayer (1993)	7281
Cabinetmaker (1992)	7272
Carpenter (1993)	7271
Cement Finisher (1995)	7282
Construction Electrician (1994)	7241
Cook (1991)	6242
Electrical Mechanic (1981)	7333
Electronics Technician Vol. I (1986) (Video Equipment)	2242
Electronics Technician Vol. II (1986) (Audio Equipment)	2242

* Red Seal analyses are indicated in bold

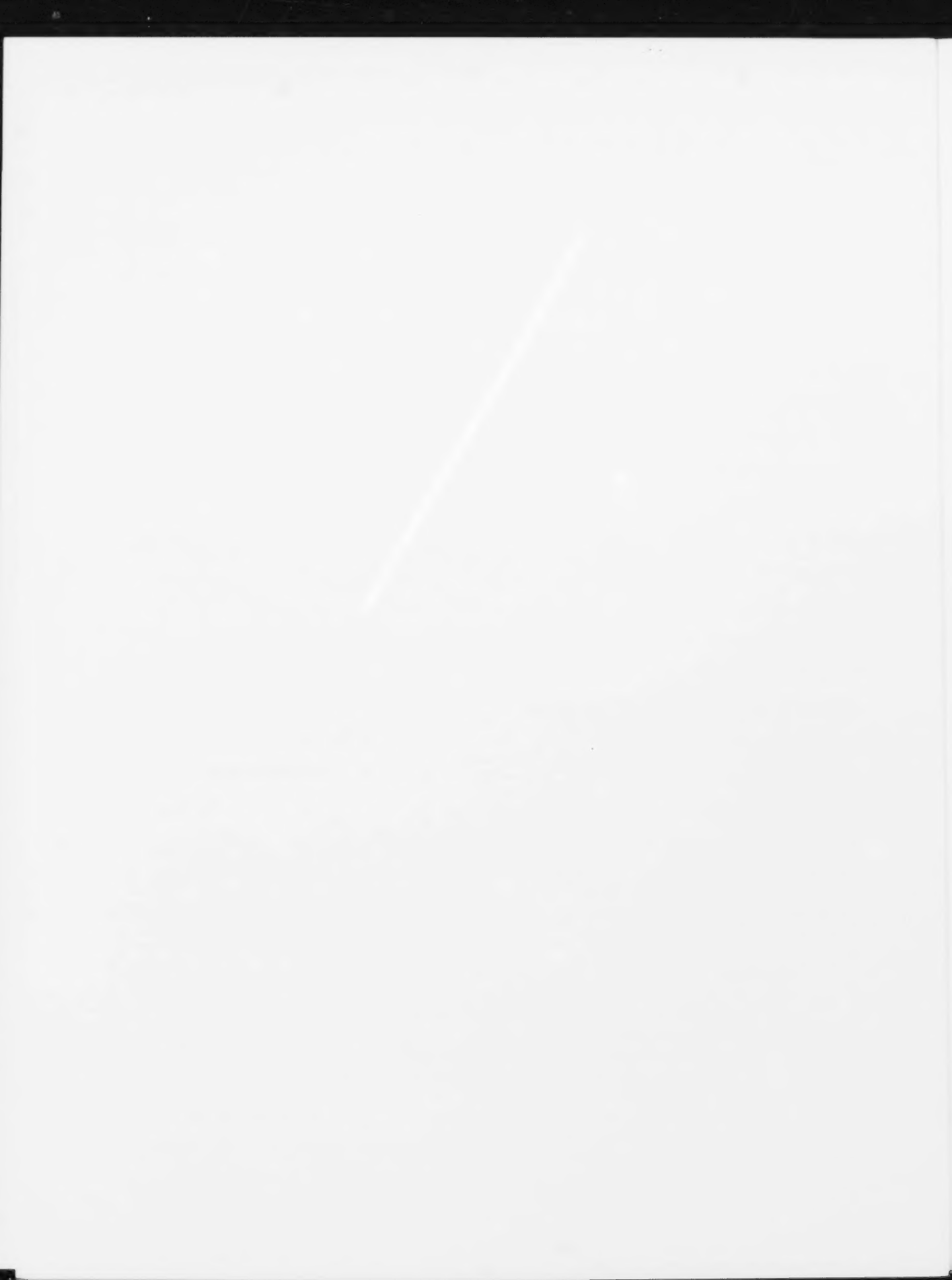
** National Occupational Classification

Electronics Technician Vol. III (1986) (Computer Equipment)	2242
Electronics Technician Vol. IV (1986) (Office Equipment)	2242
Electronics Technician Vol. VI (1986) (Communication Equipment)	2242
Electronics Technician Vol. VII (1986) (Signaling Equipment)	2242
Electronics Technician Vol. VIII (1986) (Navigation Equipment)	2242
Electronics Technician Vol. IX (1986) (Video Game Equipment)	2242
Electronics Technician Vol. X (1987) (CADD Equipment)	2242
Electronics Technician Vol. XI (1987) (CAM Equipment)	2242
Electronics Technician Vol. XII (1987) (Robotics Equipment)	2242
Electronics Technician Vol. XIII (1987) (Biomedical and Laboratory Equipment)	2242
Electronics Technician Vol. XIV (1987) (Industrial Process-Control Equipment)	2243
Farm Equipment Mechanic (1994)	7312
Floorcovering Installer (1991)	7295
Glazier (1994)	7292
Hairstylist (1992)	6271
Heating (Gas and Oil) Servicer - Commercial and Industrial (1978)	7331
Heavy Equipment Mechanic (1987)	7312
Heavy Equipment Operator (1983)	7421
Industrial Electrician (1987)	7242
Industrial Instrument Mechanic (1988)	2243
Industrial Mechanic (Millwright) (1996)	7311
Insulator (Heat and Frost) (1993)	7293
Ironworker (Generalist) (1993)	7264
Lather (Interior Systems Mechanic) (1994)	7284

Logistics (1992)	0713
Machinist (1992)	7231
Major Electrical Appliance Repairer (1984)	7332
Mobile Crane Operator (1992)	7371
Motorcycle Mechanic (1995)	7334
Motor Vehicle Body Repairer (Metal and Paint) (1997)	7322
Motor Vehicle Repairer (Truck and Transport) (1983)	7321
New Home Builder and Residential Renovation Contractor (1992)	0712
Oil Burner Mechanic (1997)	7331
Painter and Decorator (1993)	7294
Partsperson (1995)	1472
Plumber (1996)	7251
Power Engineer (1997)	7351
Powerline Technician (1996)	7244
Refrigeration and Air Conditioning Mechanic (1997)	7313
Roofer (1991)	7291
Sheet Metal Worker (1990)	7261
Sprinkler System Installer (1995)	7252
Steamfitter-Pipefitter (1996)	7252
Steel Fabricator (Fitter) (1994)	7263
Tool and Die Maker (1992)	7232
Truck-Trailer Repairer (1994)	7321
Welder (1996)	7265

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FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources Development Canada sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA), to develop a series of occupational analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;
- to identify those tasks that are performed by skilled workers in every province and territory;
- to develop instruments for use in the preparation of interprovincial standards "Red Seal" examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility, in Canada, of trainees and skilled workers; and
- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

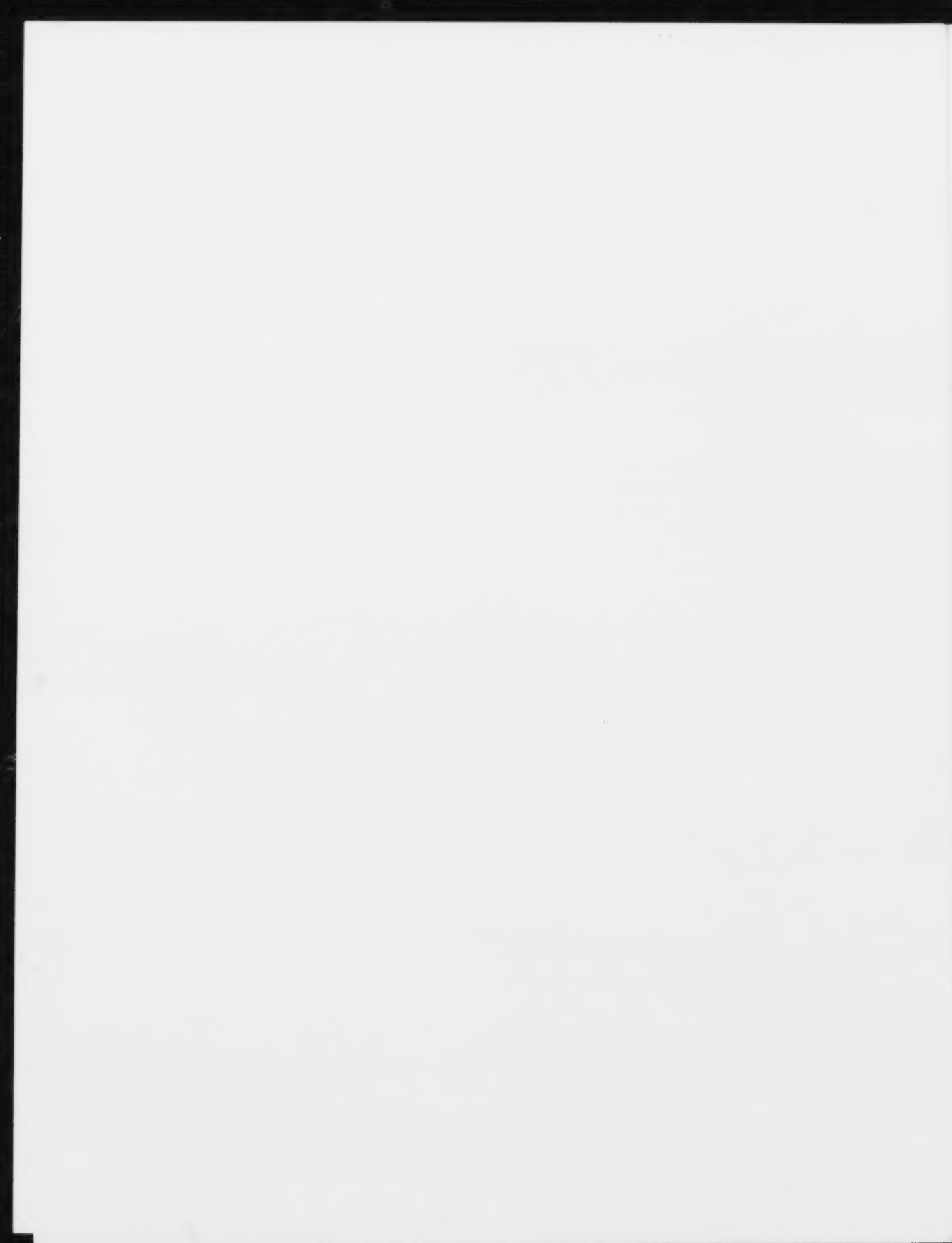


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BLOCK B WORK PRACTICES AND PROCEDURES

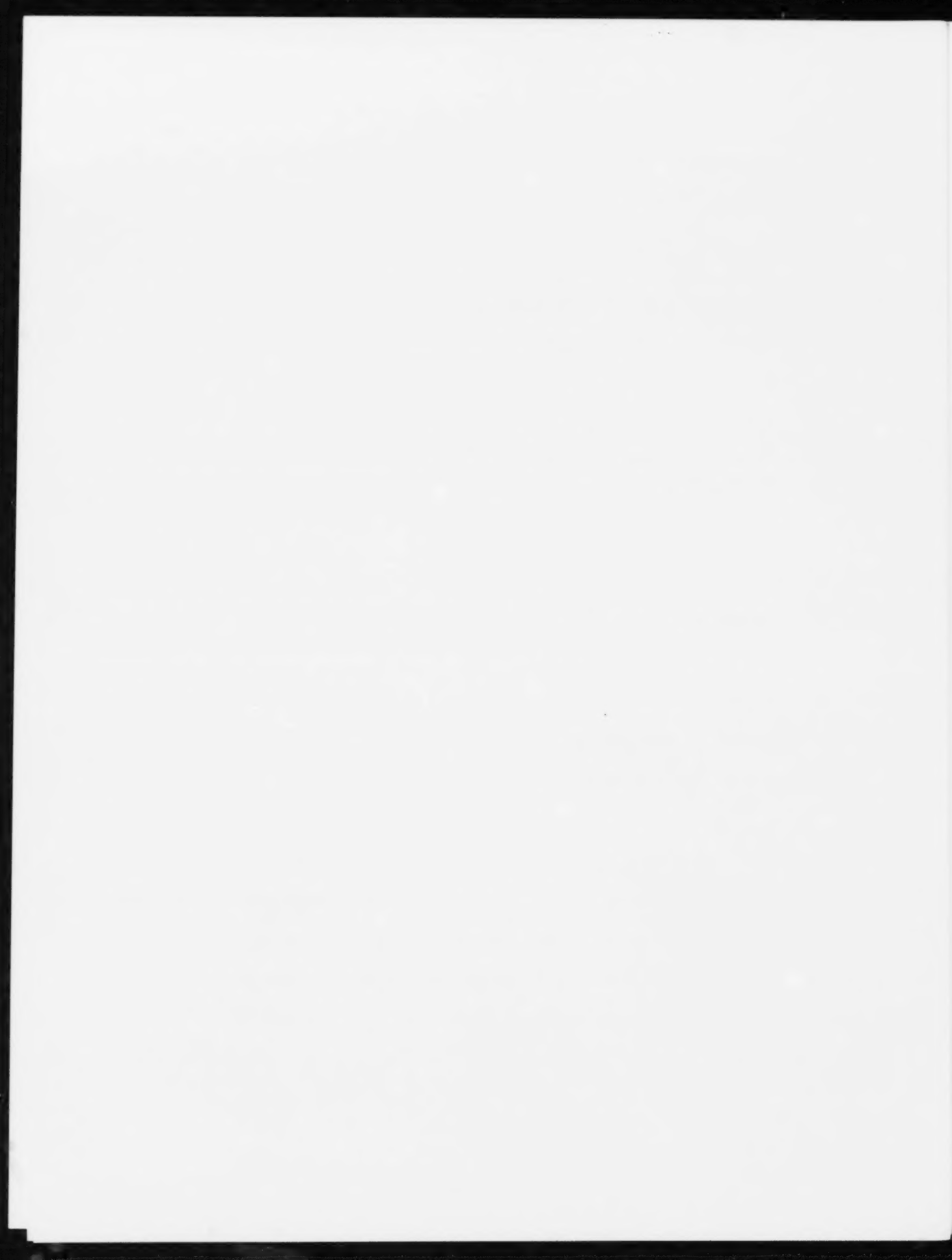
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GUIDE TO ANALYSIS

DEVELOPMENT OF ANALYSIS

A draft analysis is developed by a knowledgeable consultant who, with the assistance of a committee of industry experts in the field, identifies all the tasks performed in the occupation.

The draft is then assigned to occupational analysts at Human Resources Development Canada for review, translation and edit to ensure conformity with the nationally approved format.

The analysis is forwarded to provincial/territorial authorities for validation by specialists in the field. Their recommendations are assessed and incorporated into the final draft which also includes the identification of the common core tasks performed in the occupation.

The occupational analysis is published in both official languages.

STRUCTURE OF ANALYSIS

To facilitate the understanding of the nature of the occupation, the work performed is divided into the following divisions:

- A. **BLOCK**
 - is the largest division within the analysis and reflects a distinct operation relevant to the occupation.
- B. **TASK**
 - is the distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".
- C. **SUB-TASK**
 - is the smallest division into which it is practical to sub-divide any work activity and, combined with others, fully describes all duties constituting a "TASK".

Enabling Objectives

The element of skill and knowledge that an individual must acquire to perform the task adequately.

Trend

Any shifts or changes in technology that affect the sub-tasks are identified under this heading.

VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-Committee developed a method for the validation of the national Red Seal occupational analyses.

A draft of the analysis is sent to all provinces/territories for validation. Each jurisdiction rates the sub-tasks and applies percentage ratings to blocks and tasks. This method for the validation of the national occupational analyses identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Red Seal examinations.

DEFINITIONS

YES:	the sub-task is performed.
NO:	the sub-task is not performed.
BLOCK %:	the average time a worker spends performing each block in a given year in relation to other blocks of the analysis, taking into consideration the complexity (importance plus difficulty) of the block. (See Appendices "C" and "D" for numerical and graphical representations of this specific occupation.)
TASK %:	the average time a worker spends performing each task in relation to other tasks within the block, taking into consideration the complexity (importance plus difficulty) of the task. (See Appendix "C" for numerical representation of this specific occupation.)
NV:	<u>N</u> ot <u>V</u> alidated by the province/territory.
ND:	<u>N</u> ot <u>D</u> esignated in that province/territory.

COMMON CORE

The criteria for determining common core are dependant on the performance of sub-tasks. If 70% of the responding jurisdictions (excluding NVs and NDs) perform the sub-task, it shall be considered common core.

In the analysis, Block A is reserved for safety practices. Since safety practices are a mandatory feature of all occupations, it is considered common core and ratings are not required.

Interprovincial Red Seal examinations are based on the common core identified through this validation process.

SCOPE OF ANALYSIS

The motor vehicle body repairer (metal and paint) is a skilled tradesperson who possesses a wide range of knowledge and skills in areas such as:

- repair and replacement of glass and glass assemblies;
- repair and replacement of sheet metal panels;
- repair and replacement of plastic and composite panels;
- repair and replacement of frame and structural components;
- repair and replacement of mechanical components;
- repair and replacement of electrical components;
- diagnose and repair electronic systems;
- assessment of damage;
- refinishing;
- detailing; and
- welding.

Depending on the place of employment, a motor vehicle body repairer (metal and paint) may be called upon to work on any type of motor vehicle from the smallest of automobiles to the largest of trucks or buses.

Written in behavioural terms, the analysis outlines the most common and frequently required tasks and sub-tasks that a qualified motor vehicle body repairer (metal and paint) will be required to perform efficiently in the trade anywhere in Canada.

OBSERVATIONS AND TRENDS ARISING FROM ANALYSIS

Technological advancements, design modifications, passenger safety and innovations in manufacturing continue to change the design and construction of the automobile. These advancements have also resulted in changes to the motor vehicle body trade repairer (metal and paint). The use of composite materials in the manufacturing of parts and components as well as the move toward automobile components being part of the structure of the automobile has resulted in the updating of existing training programs.

The trend to separate the body repairer and vehicle painter into separate trade designations continues. Large repair shops tend to have tradespersons specialize. The smaller body repair shops, due to size and volume of work, continue to have tradespersons perform a wide variety of body repair work.

The motor vehicle body repairer (metal and paint) continues to have the responsibility to restore the vehicle to its original appearance and handling capabilities. Additionally, the motor vehicle body repairers now must concern themselves with the additional responsibilities of the structural integrity of the vehicle, the structural integrity of vehicle components and safety restraint systems for passengers. These factors have contributed to an increase in the level and complexity of auto body repair technology.

Frame construction has evolved from the conventional frame technology, to unibody, to today's technology where, in addition to the frame, an increasing number of the vehicle components such as glass panels and body panels contribute to the vehicle's structural strength and integrity. As a result of industry's movement toward an increasing number of vehicle components contributing to the overall strength and integrity of the vehicle, the motor vehicle body repairer (metal and paint) is working with and to manufacturer's specifications and instructions that represent an increased higher level of technology.

The use of safety devices such as air bags and collapsible components, the move toward vehicle components contributing to the structural strength and integrity of the vehicle, the increased use of composite materials, the use of anti-blocking braking systems (ABS) plus the use of more advanced primers, paints and paint finishes has moved the auto body repairer to the auto body technician level.

For the purpose of this analysis, the glossary of terms has been modified to reflect these advances. The definitions have also been changed to reflect the new technological advances.

ANALYSIS

BLOCK A SAFETY

Task 1 **Demonstrates safe working practices and techniques to ensure an injury-free work place.**

Trend: There is an increasing importance placed on first aid training including cardiopulmonary resuscitation (CPR). There are also increased concerns regarding the use of materials and practices that are health and environmental hazards.

Sub-tasks	Enabling Objectives	Tools & Equipment
1.01 Applies first aid.	knowledge of basic first aid procedures knowledge of first aid for eye injuries knowledge of location and use of first aid kit ability to administer basic first aid knowledge of mouth-to-mouth resuscitation and CPR	first aid kit, eye wash station
1.02 Maintains good housekeeping.	knowledge of emergency phone numbers ability to maintain cleanliness and order in work area ability to apply correct methods for storage of tools, shop equipment and loose objects ability to remove hazards ability to keep aisles clear ability to clean up grease and oil spills ability to dispose of waste materials	brooms, shovels, disposal containers, storage boxes or hangers, Absorb-All, sawdust

	Sub-tasks	Enabling Objectives	Tools & Equipment
1.03	Wears personal protective equipment.	knowledge of personal protective equipment required for specific operations knowledge of impact of non-use of personal equipment ability to adjust and wear personal protective equipment properly	paint suit, positive pressure air fed respirator, air purifying respirator (charcoal), safety footwear, dust mask, ear protectors, air hoses, safety eye wear, solvent resistant gloves, dust mask
1.04	Operates emergency safety equipment.	knowledge of location of emergency safety equipment knowledge of operating procedures for emergency safety equipment	fire extinguishers, fire blanket, stretchers, respirator, first aid station, eye wash station, fire hoses
1.05	Assures protection from fire hazards.	knowledge of types of fire equipment knowledge of types of fires (oil, etc.) knowledge of safe disposal procedures for paint contaminated material (rags, filters) knowledge of hazards involved with alternate fuel vehicles ability to shut down fuel delivery to propane and natural gas powered vehicles	fire extinguishers, environmentally safe disposal containers
1.06	Handles hazardous materials.	knowledge of hazardous materials commonly found in automotive technician centres knowledge of safety equipment required to handle hazardous materials knowledge of storage requirements for lubricants and solvents	bulletins, federal, provincial or territorial regulations regarding hazardous materials, proper protective gear, approved container
1.07	Complies with government safety standards and regulations.	knowledge of Workplace Hazardous Materials Information System (WHMIS) regulations	bulletins, federal, provincial or territorial regulations regarding hazardous materials,

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to read Material Safety Data Sheets (MSDS)	bulletins regarding baking procedures on vehicles with propane
	knowledge of safe handling procedures for paint and solvent	
	knowledge of disposal procedures for paint and solvent wastes	
	knowledge of the safe handling procedures for paint shop wastes (rags, filters, etc.)	
	knowledge of hazards of airborne contaminants	
	knowledge of Worker's Compensation Board (WCB) legislation	
	knowledge of Occupational Health and Safety (OHS) Regulations	

BLOCK B WORK PRACTICES AND PROCEDURES

Task 2 Communicates with others.

Trend: The trend is moving towards automation, e.g. fax, computer (interface, Photolink, Shoplink) and telephone hot line.

Sub-tasks		Enabling Objectives								Tools & Equipment		
2.01	Accesses information.	knowledge of communication skills required to ask appropriate questions								fax, computer, micro-fiches, catalogues, shop manuals, bulletins		
		ability to operate communication equipment										
		ability to acquire information										
		ability to interpret information received										
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV	
2.02	Prepares and imparts technical information.	knowledge of the auto body industry								fax, computer, micro-fiches, catalogues, shop manuals, bulletins		
		knowledge of automobile construction, auto body parts and accessories										
		ability to prepare technical information										
		ability to impart technical information										
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV	

	Sub-tasks	Enabling Objectives	Tools & Equipment
2.03	Applies verbal communication skills.	knowledge of verbal presentation skills knowledge of questioning techniques ability to communicate information ability to acquire information through questioning	
	<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> no	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
2.04	Applies written communication skills.	knowledge of written communication skills ability to interpret written information ability to communicate in writing	
	<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
2.05	Uses office equipment.	knowledge of the types of office equipment available knowledge of the purpose of office equipment ability to operate office equipment	fax, computer, telephone
	<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> no	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV

Task 3 Prepares repair estimates.

Trend: The trend is moving towards automation and computerized estimating.

	Sub-tasks	Enabling Objectives	Tools & Equipment
3.01	Obtains necessary customer and vehicle information.	knowledge of where to find specific vehicle information knowledge of vehicle identification number (VIN) tag and paint code ability to interpret VIN code and paint tag ability to communicate with client to acquire specific information	technical manuals, bulletins
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes yes yes yes NV	
3.02	Performs visual inspection.	knowledge of trade standards ability to recognize the cause and effect of collision damage.	
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes yes yes yes NV	
3.03	Lists parts, materials and labour required.	knowledge of vehicle construction knowledge of parts terminology knowledge of parts by source and price knowledge of material by source and costs ability to interpret collision estimating guide	estimation sheet, collision estimating guide, calculator, computer terminal

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to identify repairable and non-repairable parts	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

3.04	Calculates repair costs.	knowledge of the purpose of a collision estimate sheet	estimation sheet, collision estimating guide, calculator, computer terminal
		ability to perform basic mathematical operations	
		ability to complete a collision estimate sheet	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes
<u>PQ</u> no	<u>ON</u> yes	<u>MA</u> no	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes
			<u>YK</u> NV

Task 4 Follows work practices and procedures.

Trend: The trend is towards more panel replacement rather than repair.

Sub-tasks	Enabling Objectives	Tools & Equipment
4.01	Applies organizational skills.	technical manuals, bulletins
	knowledge of repair and replacement techniques	
	knowledge of repair and replacement procedures	
	ability to perform repair and replacement techniques and procedures in an organized, sequential manner	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.02	Interprets the work order.	knowledge of all aspects of collision repair ability to interpret the work order	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
4.03	Inspects the damage.	knowledge of all aspects of collision repair knowledge of the techniques and procedures required for the repair and replacement of parts and components knowledge of inspection procedures ability to inspect the damage	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
4.04	Reconciles parts and materials received to estimate.	knowledge of repair terminology ability to compare parts listed to parts invoiced	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
4.05	Identifies discrepancies.	knowledge of required parts and materials ability to perform discrepancy identification procedures ability to identify discrepancies	estimation sheet, collision estimating guide, calculator, computer terminal
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
4.06	Determines repair procedure.	knowledge of collision repair procedures ability to develop a repair plan	estimate sheet, job work order
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
4.07	Effects repair required.	knowledge of repair techniques and procedures ability to perform repair techniques and procedures	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, spoons, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, vice grips, dolly, pneumatic tools, hydraulic floor jacks, surge protector
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
4.08	Performs pre-delivery inspection.	knowledge of all damaged areas and repairs completed ability to perform pre-delivery inspection procedures ability to perform clean-up techniques	estimate sheet, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, spoons, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, vice grips
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Task 5 Operates tools and equipment.

Trend: Equipment is becoming more advanced requiring updating in operating techniques.

	Sub-tasks	Enabling Objectives	Tools & Equipment
5.01	Operates hand and power tools.	knowledge of tools used in repair and replacement procedures ability to operate tools when performing repair and replacement maintenance procedures	manufacturers' operating instructions
	<u>NF</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes	<u>NT</u> yes <u>YK</u> NV
5.02	Operates general shop equipment.	knowledge of types of equipment used when performing repair and replacement procedures ability to operate shop equipment	manufacturers' operating instructions
	<u>NF</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes	<u>NT</u> yes <u>YK</u> NV
5.03	Operates frame and measuring equipment.	knowledge of set-up procedures for frame and measuring equipment knowledge of operating procedures for frame and measuring equipment ability to set up frame and measuring equipment ability to operate frame and measuring equipment	manufacturers' operating instructions
	<u>NF</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes	<u>NT</u> yes <u>YK</u> NV

Sub-tasks	Enabling Objectives	Tools & Equipment
5.04 Operates welding equipment.	knowledge of set-up procedures for welding equipment knowledge of operating procedures for welding equipment ability to set up welding equipment ability to operate welding equipment	manufacturers' operating instructions, GMAW, spot welder, oxy-fuel cutter, brazing, plasma cutter, ARC cutter, welding blankets
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

5.05 Operates refinishing equipment.	knowledge of set-up procedures for refinishing equipment knowledge of operating procedures for refinishing equipment ability to set up refinishing equipment ability to operate refinishing equipment	manufacturers' operating instructions
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

Task 6 Maintains tools and equipment.

Trend: Equipment is becoming more advanced requiring updating in operating and maintenance techniques.

Sub-tasks	Enabling Objectives	Tools & Equipment
6.01 Maintains hand and power tools.	knowledge of tools used in maintenance procedures	manufacturers' maintenance

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate tools when performing maintenance procedures	instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife or scraper, wire cutters, torque wrench, vice grips
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
6.02	Maintains general shop equipment.	
	knowledge of types of equipment used when performing maintenance procedures	manufacturers' maintenance instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife or scraper, wire cutters, torque wrench, vice grips
	ability to operate shop equipment	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
6.03	Maintains frame and measuring equipment.	
	knowledge of location of maintenance procedures for frame and measuring equipment	manufacturers' maintenance instructions, sockets, ratchets, wrenches, pliers, clamps, measuring tape
	ability to interpret and apply maintenance procedures on frame and measuring equipment	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Sub-tasks		Enabling Objectives										Tools & Equipment	
6.04	Maintains welding equipment.	knowledge of location of maintenance procedures for welding equipment										manufacturers' maintenance instructions, sockets, ratchets, wrenches, pliers, screwdrivers, files, tin snips, wire cutters, torque wrench, tip cleaner	
		ability to interpret and apply maintenance procedures on welding equipment											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>		
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV		
6.05	Maintains refinishing equipment.	knowledge of location of maintenance procedures for refinishing equipment										manufacturers' maintenance instructions, sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, punches, torque wrench, gun washer machine, gun wash (thinner), tip cleaner	
		ability to interpret and apply maintenance procedures on refinishing equipment											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>		
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV		

BLOCK C FRAME AND STRUCTURAL COMPONENTS

Task 7 Assesses damages.

Trend: Is to assess complete vehicle for secondary damage, as damage is not restricted to primary collision area.

	Sub-tasks	Enabling Objectives	Tools & Equipment
7.01	Identifies primary and secondary damage.	knowledge of what constitutes primary and secondary damage ability to identify primary and secondary damage	
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
7.02	Sets up vehicle on frame machine.	knowledge of frame equipment ability to set up frame straightening equipment	stationary, portable, racks, benches, track style straighteners
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
7.03	Measures structure to specifications.	knowledge of techniques and procedures for measuring structure components knowledge of manufacturing specifications ability to set up and operate measuring equipment ability to interpret measuring specifications	manufacturing specifications, measuring tape, tram bar, centring gauges, laser measuring systems
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
7.04	Determines repair and replacement procedures.	knowledge of repair and procedures required	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of tools required for repair or replacement	tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets, electronic protection device
	ability to remove or replace structural component using tools and equipment	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Task 8 Repairs structural component.

Trend: The trend is use of uni-body construction and controlled collapse components.

Sub-tasks	Enabling Objectives	Tools & Equipment
8.01	Sets up vehicle for repair equipment.	knowledge of frame equipment ability to set up frame straightening equipment
		stationary, portable, racks, benches, track style straighteners
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
8.02	Prepares the component for repair.	knowledge of recommended repair procedure knowledge of types of devices and systems described ability to prepare component for repair ability to use tools and equipment
		drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets,

Sub-tasks		Enabling Objectives	Tools & Equipment
			electronic protection device
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
8.03	Straightens component.		
		knowledge of recommended repair procedures	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection materials, welding blankets, electronic protection device, hammers
		knowledge of devices and systems used in recommended repair procedures	
		ability to operate straightening equipment	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
8.04	Verifies specifications.		
		knowledge of manufacturing specifications, and measuring equipment	measuring devices, specifications
		ability to meet manufacturing specifications	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
8.05	Restores integrity.		
		knowledge of recommended repair procedure to restore integrity and repair equipment	drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion
		ability to restore integrity and use repair equipment	

Sub-tasks				Enabling Objectives							Tools & Equipment		
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV	
					protection material, welding blankets, electronic protection device, hammers								
8.06	Prepares surface for corrosion protection.				knowledge of manufacturer's recommended procedures							sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, wire wheels, sand blaster, sander, masking materials, personal protective equipment	
					knowledge of corrosion protection tools and equipment								
					ability to perform manufacturer's specified procedures								
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV	
8.07	Applies corrosion protection.				knowledge of recommended corrosion protection application and applicators							sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, manual applicators, pressure applicators, personal protective equipment	
					ability to apply corrosion protection								
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV	

Task 9 Replaces structural component.

Trend: The trend is toward more use of structural components.

Sub-tasks				Enabling Objectives							Tools & Equipment		
9.01	Corrects secondary damage.			knowledge of secondary damage							drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel, grinder, flange tool, hole punch, GMAW welder, welding clamps, frame flange tool, corrosion protection material, hammers		
				knowledge of manufacturer's specifications									
				knowledge of structural tools and equipment									
				ability to assess secondary damage									
				ability to correct secondary damage									
				ability to use structural repair tools and equipment									
<u>NF</u>			<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes			yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
9.02	Removes component.			knowledge of component removal procedures required for structural component removal							sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, cut-off tool, cutting torch, plasma cutter, pneumatic air chisel		
				knowledge of tools and equipment required for structural component removal									
				ability to remove structural component to manufacturer's specifications									
				ability to use tools and equipment required for structural component removal									
<u>NF</u>			<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes			yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

	<u>Sub-tasks</u>	<u>Enabling Objectives</u>	<u>Tools & Equipment</u>
9.03	Prepares damaged area for replacement component.	knowledge of procedures for preparing area knowledge of tools and materials required for preparing area ability to prepare area ability to use required tools and apply welding-thru primer	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, grinder, flange tool, hole punch, drill, sand blaster, masking materials
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
9.04	Installs replacement component.	knowledge of component replacement procedures knowledge of tools and equipment required for installation of new component knowledge of measuring equipment ability to install new components ability to use tools and equipment ability to interpret measuring specifications	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, GMAW welder, measuring equipment, grinder, welding blankets, electronic protection device
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
9.05	Verifies specifications.	knowledge of manufacturer's specifications ability to verify if repair meets manufacturer's specifications	measuring equipment, specification documentation

Sub-tasks				Enabling Objectives							Tools & Equipment	
				ability to use tools and equipment								
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV	
9.06	Prepares surface for corrosion protection.			knowledge of manufacturer's recommended procedures							sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, drill, wire wheels, sand blaster, sander	
				knowledge of corrosion protection tools and equipment								
				ability to perform manufacturer's recommended procedures								
				ability to operate required tools and equipment								
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV	
9.07	Applies corrosion protection.			knowledge of recommended corrosion protection application procedures and applicators							sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, manual applicators, pressure applicators, masking materials	
				ability to apply corrosion protection								
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV	

BLOCK D OUTER BODY PANELS

Task 10 Assesses damages.

Trend: Movement towards composite panels.

Sub-tasks		Enabling Objectives								Tools & Equipment			
10.01	Identifies panel composition.	knowledge of manufacturer and aftermarket's bulletins and manuals								magnet, screwdrivers, grinder			
		ability to interpret manuals and bulletins											
		ability to identify composition of panel											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
10.02	Determines repair and replacement procedures.	knowledge of vehicle construction											
		knowledge of properties and characteristics of panel materials											
		ability to assess damage severity											
		ability to recognize assembly techniques											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 11 Repairs panel.

Trend: The repairing of panels is becoming less frequent, while replacing of panels is becoming more frequent.

Sub-tasks		Enabling Objectives								Tools & Equipment			
11.01	Prepares panel for reshaping.	knowledge of vehicle construction								basic tool box			
		knowledge of panel repair techniques											
		ability to identify panel material											
		ability to determine the directions of damaging force											
		ability to remove parts to access panel											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
11.02	Reshapes panel.	knowledge of shaping and shrinking techniques								basic tool box, grinder, heating equipment, shrinking equipment, dent puller			
		knowledge of relieving stress											
		ability to perform shrinking and shaping techniques											
		ability to perform stress relieving											
		ability to assess the damage direction											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
11.03	Restores panel strength.	knowledge of vehicle construction								basic tool box, grinder, GMAW welder, welding blankets			
		knowledge of panel composition											
		ability to restore pre-accident strength											
		knowledge of when to have a reinforcing panel											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Sub-tasks				Enabling Objectives								Tools & Equipment			
11.04	Prepares panel surface for fill.			knowledge of panel composition								grinder, sander, air blower			
				knowledge of filling techniques											
				knowledge of procedures for preparing panels for fillers											
				ability to grind the damaged area											
				ability to operate cleaning equipment											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>				
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV				
11.05	Fills panel.			knowledge of panel composition and use of fillers								spreaders, applicators, mixing tools			
				ability to apply fillers											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>				
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV				
11.06	Sands filler.			knowledge of filler characteristics								files, blocks, air blower, sandpapers			
				knowledge of sanding techniques											
				knowledge of sanding and other abrasive products											
				ability to select abrasives											
				ability to sand and level filler to original contour											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>				
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV				

	Sub-tasks	Enabling Objectives	Tools & Equipment
11.07	Applies corrosion protection.	knowledge of existing corrosion protection methods knowledge of existing corrosion protection products ability to select corrosion protection products ability to apply corrosion protection products	corrosion protection application equipment
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Task 12 Replaces panel.

Trend: Trend is toward replacing rather than repairing panels.

	Sub-tasks	Enabling Objectives	Tools & Equipment
12.01	Prepares for removal of panel.	knowledge of vehicle construction knowledge of panel composition knowledge of tools required to remove panel ability to prepare a panel for removal ability to remove necessary parts	sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

12.02	Removes panel.	knowledge of parts removal procedures	sockets, ratchets, wrenches, hammers,
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Sub-tasks		Enabling Objectives								Tools & Equipment			
		ability to remove panels								pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench, cutting equipment, grinder, heating equipment, plasma cutter, welding blankets			
		ability to weld panels											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
12.03	Prepares panel for installation.	knowledge of vehicle construction								sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, wire cutters, torque wrench			
		knowledge of parts replacement procedures											
		ability to use installation tools											
		ability to clean contact surfaces											
		ability to pre-fit the replacement panel											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
12.04	Installs panel.	knowledge of parts replacement procedures								sockets, ratchets, wrenches, hammers, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, measuring tape, putty knife, torque wrench, welding equipment, bonding equipment,			
		knowledge of welding techniques											
		knowledge of bonding procedures											
		ability to align the panel											
		ability to operate welding equipment											

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to apply bonding procedures	grinder, welding blankets
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes
		<u>YK</u> NV

12.05	Applies corrosion protection.	knowledge of corrosion protection methods	corrosion protection applicator, seam sealer applicator, masking materials
		knowledge of corrosion protection products	
		knowledge of body and seam sealer application	
		ability to apply corrosion protection	
		ability to apply seam sealers	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes
		<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
			<u>NT</u> yes
			<u>YK</u> NV

BLOCK E GLASS

Task 13 Repairs or replaces movable glass.

Trend: Hardware associated with moveable glass is becoming less complicated.

Sub-tasks	Enabling Objectives	Tools & Equipment
13.01	Tests for leaks.	ability to locate reference material
		screwdrivers, sockets, extensions, wrenches,

Sub-tasks	Enabling Objectives								Tools & Equipment		
	ability to check operation to manufacturer's specifications										
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 14 Repairs or replaces fixed glass.

Trend: Fixed glass is becoming a more integral part of complete motor vehicle integrity and strength.

Sub-tasks	Enabling Objectives								Tools & Equipment		
14.01 Tests for leaks.	knowledge of location of manufacturer's information ability to interpret manufacturer's information ability to test for leaks to manufacturer's specifications								blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers		
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

14.02 Repairs leaks.	knowledge of location of reference sources								blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass		
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Sub-tasks		Enabling Objectives								Tools & Equipment			
		knowledge of glass installation leak repair procedures								removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, caulking gun, duct tape, latex gloves, rags, panel protection covers, adhesives			
		ability to access leak repair information											
		ability to repair leaks											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>		
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV		
14.03	Removes glass.	knowledge of location of glass removal procedures								blow gun, razor blade, and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers			
		knowledge of glass removal procedures											
		ability to interpret glass removal procedures											
		ability to remove glass											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>		
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV		
14.04	Installs glass.	knowledge of location of glass installation procedures								blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal			
		knowledge of glass installation procedures											

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to interpret glass installation procedures	equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, propane torch, caulking gun, duct tape, latex gloves, rags, panel protection covers
	ability to determine materials needed	
	ability to install glass	

NF NS PE NB PQ ON MA SK AB BC NT YK
 yes yes yes yes yes yes yes yes yes yes yes NV

14.05	Replaces glass.	knowledge of glass replacement materials	blow gun, razor blades and holder, utility knife, screwdrivers, Allen keys, hot/cold glass removal tools, pneumatic removal equipment, sockets, heat gun, trim clip removal tools, chisels, rackets, extensions, piano wire, vacuum cleaner, goggles, gloves, caulking gun, duct tape, latex gloves, rags, panel protection covers, adhesives
		knowledge of glass replacement procedures	
		ability to determine materials needed	
		ability to replace glass	

NF NS PE NB PQ ON MA SK AB BC NT YK
 yes yes yes yes yes yes yes yes yes yes yes NV

14.06	Checks for leaks.	knowledge of leak test procedures	service light, water hose, air hose, ultrasonic equipment, paper, soapy water
		ability to apply leak test procedures	

NF NS PE NB PQ ON MA SK AB BC NT YK
 yes yes yes yes yes yes yes yes yes yes yes NV

BLOCK F MECHANICAL COMPONENTS

Task 15 Diagnoses mechanical problems.

Trend: Trend is towards more diagnostics being performed on mechanical components to determine repair or replacement.

	Sub-tasks	Enabling Objectives	Tools & Equipment									
15.01	Inspects mechanical faults visually.	knowledge of location of components knowledge of system operation ability to locate components ability to operate systems	shop manuals, technical bulletins									
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
15.02	Tests mechanical systems.	knowledge of systems operation knowledge of testing equipment knowledge of manufacturer's specifications and testing procedures ability to interpret manufacturers' specifications and testing procedures ability to perform tests, using test equipment ability to diagnose the problem	shop manuals, testing equipment									
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

	Sub-tasks				Enabling Objectives						Tools & Equipment		
15.03	Determines procedure for repair.				knowledge of system operation						shop manuals, technical bulletins		
					knowledge of manufacturer's repair procedures								
					ability to interpret manufacturer's specifications and repair procedures								
	<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>	
	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV	

Task 16 Repairs mechanical system.

Trend: The trend is towards minor mechanical repairs being performed by the motor vehicle body repairer (metal and paint).

	Sub-tasks	Enabling Objectives	Tools & Equipment									
16.01	Sets up repair equipment.	knowledge of manufacturer's specifications knowledge of tools and equipment required ability to interpret manufacturer's specifications ability to prepare components for repair	shop manuals									
	<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
16.02	Removes parts for accessibility.	knowledge of component location	shop manuals, torque wrench, gaskets, spring compressor, ball joint									

[illegible]

Sub-tasks				Enabling Objectives				Tools & Equipment			
16.04	Verifies system operation and that specifications are met.			knowledge of system operation				shop manuals, specific repair and test equipment			
				knowledge of manufacturer's specifications							
				knowledge of testing equipment							
				ability to operate system							
				ability to interpret manufacturer's specifications							
				ability to use testing equipment and shop manuals							
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 17 Replaces mechanical component.

Trend: Towards replacement rather than repair.

Sub-tasks				Enabling Objectives								Tools & Equipment			
17.01	Sets up repair equipment.			knowledge of manufacturer's specifications								shop manuals, specific tools and equipment			
				knowledge of tools and equipment required											
				ability to interpret manufacturer's specifications											
				ability to prepare component for removal											
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>				
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV				

	Sub-tasks	Enabling Objectives	Tools & Equipment
17.02	Removes defective component.	knowledge of component location knowledge of manufacturer's specifications knowledge of components operation knowledge of specific tools and operation equipment ability to interpret manufacturer's specifications ability to locate components ability to operate tools and equipment	shop manuals, specific tools and equipment
	<u>NE</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes <u>NT</u> yes <u>YK</u> NV	
17.03	Installs component.	knowledge of manufacturer's specifications knowledge of component operation knowledge of tools and equipment required ability to interpret manufacturer's specifications ability to operate tools and equipment	shop manuals, specific tools and equipment
	<u>NE</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes <u>NT</u> yes <u>YK</u> NV	
17.04	Verifies component operation and that specifications are met.	knowledge of manufacturer's specifications	shop manuals, testing equipment

Sub-tasks	Enabling Objectives	Tools & Equipment
	knowledge of components and system operation	
	knowledge of testing equipment	
	ability to interpret manufacturer's specifications	
	ability to operate component and systems	
	ability to operate equipment	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PO</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

BLOCK G ELECTRICAL SYSTEM

Task 18 Diagnoses electrical problems.

Trend: The motor vehicle body repairer (metal and paint) has to perform electrical diagnosis and repair more frequently. Computer replacement or diagnostic is also becoming common practice.

Sub-tasks	Enabling Objectives	Tools & Equipment
18.01 Inspects electrical system visually.	knowledge of location of electrical systems	
	ability to recognize damaged components	
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PO</u> yes	<u>ON</u> yes
<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
18.02	Tests electrical system.	knowledge of diagnostic equipment knowledge of electrical circuits knowledge of testing procedures knowledge of manufacturer's testing procedures ability to read wiring diagrams ability to use diagnostic equipment	wiring diagrams, continuity testers, test lamps, computerized diagnostic equipment
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> no NV
18.03	Interprets fault codes and flow charts.	knowledge of manufacturer's troubleshooting procedures and fault codes knowledge of electrical circuits knowledge of electronic components and their function ability to read fault codes ability to read flow charts ability to read wiring diagrams	manufacturer's manuals and specifications, diagnostic equipment
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> no yes yes yes yes yes	<u>NT</u> <u>YK</u> no NV
18.04	Verifies diagnosis of problem.	knowledge of manufacturer's prescribed sequence of operation of system ability to operate system ability to compare actual sequence of operation to manufacturer's	manufacturer's procedures and specifications, diagnostic equipment

Sub-tasks	Enabling Objectives										Tools & Equipment
	prescribed sequence of operation of system										
<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PO</u> no	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> no	<u>YK</u> NV

Task 19 Repairs electrical system.

Trend: Trend is towards more component replacing than repairing.

Sub-tasks		Enabling Objectives										Tools & Equipment	
19.01	Prepares system for repair.	knowledge of the types of parts and components requiring repair											
		knowledge of which parts to remove to facilitate the repair											
		knowledge of manufacturers' procedures to safe guard electronic components											
		ability to locate components											
		ability to remove components											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PO</u> no	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
19.02	Repairs system.	knowledge of wiring repair procedures including soldering and solder-free paints										soldering gun, continuity tester, connectors, electrical tape	
		ability to repair wiring to manufacturers' specifications											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PO</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
19.03	Verifies operation of system.	knowledge of manufacturer's prescribed sequence of operation of system knowledge of manufacturer's troubleshooting and testing procedures ability to operate system ability to compare actual operating sequence of system to manufacturer's prescribed operating sequence of system	manufacturer's procedures and specifications, diagnostic equipment
	<u>NE</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> no <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes <u>NT</u> no <u>YK</u> NV	

Task 20 Replaces electrical component.

Trend: Trend is towards more replacing of components and emphasis on precautions when installing components.

	Sub-tasks	Enabling Objectives	Tools & Equipment
20.01	Prepares system for component replacement.	knowledge of manufacturer's installation instructions and specifications ability to locate, disconnect and remove components	
	<u>NE</u> yes <u>NS</u> yes <u>PE</u> yes <u>NB</u> yes	<u>PQ</u> yes <u>ON</u> yes <u>MA</u> yes <u>SK</u> yes <u>AB</u> yes <u>BC</u> yes <u>NT</u> yes <u>YK</u> NV	

Sub-tasks		Enabling Objectives										Tools & Equipment	
20.02	Removes defective component.	knowledge of vehicle construction										sockets, ratchets, wrenches, pliers, screwdrivers, chisels, clamps, punches, tin snips, magnet, hack saw, measuring tape, wire cutters	
		knowledge of component removal procedures											
		ability to remove components to manufacturer's specifications											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
20.03	Installs component to manufacturer's instructions.	knowledge of manufacturer's installation instructions and specifications										sockets, ratchets, wrenches, pliers, screwdrivers, chisels, files, clamps, punches, tin snips, magnet, hack saw, wire cutters, torque wrench, manufacturer's manual	
		ability to use manufacturer's replacement procedures											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
20.04	Verifies operation of component.	knowledge of manufacturer's prescribed sequence of operation of system										manufacturer's manual, diagnostic equipment	
		knowledge of manufacturer's testing procedures											
		ability to operate system											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> no	<u>YK</u> NV

BLOCK H RESTRAINT SYSTEMS

Task 21 Diagnoses restraint system.

Trend: The move is toward more elaborate restraint systems.

Sub-tasks		Enabling Objectives	Tools & Equipment
21.01	Inspects restraint system visually.	knowledge of types of vehicle restraint systems	shop manuals
		knowledge of operation of vehicle restraint systems	
		ability to interpret manufacturer's installation and specifications instructions	
		ability to diagnose system faults	
		<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> <u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes yes yes yes yes yes yes yes NV	
21.02	Tests restraint system.	knowledge of manufacturer's test procedures	shop manuals, manufacturer's diagnostic equipment
		knowledge of operation of restraint systems	
		knowledge of types of diagnostic equipment	
		ability to use diagnostic equipment	
		ability to interpret manufacturer's test procedures	
		ability to perform manufacturer's test procedures	
		<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> <u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes yes yes yes yes yes yes yes NV	

	Sub-tasks	Enabling Objectives	Tools & Equipment
21.03	Interprets fault codes and charts.	knowledge of where to locate fault codes and flow charts knowledge of operation of diagnostic equipment knowledge of construction of system ability to interpret fault codes ability to read flow charts and wiring diagrams ability to operate diagnostic equipment	diagnostic equipment, manufacturer's installation and specification manuals, manufacturer's flow charts

<u>NE</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

21.04	Determines replacement procedure.	knowledge of operation of restraint systems knowledge of manufacturer's replacement procedures for component ability to identify system by type ability to interpret manufacturer's information	manufacturer's installation and specification manuals
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<u>NE</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 22 Replaces restraint system.

Trend: The move is toward component replacement.

	<u>Sub-tasks</u>	<u>Enabling Objectives</u>	<u>Tools & Equipment</u>
22.01	Prepares component system for replacement.	knowledge of location of components knowledge of manufacturer's replacement procedures ability to apply manufacturer's replacement procedures ability to access components to be replaced	manufacturer's installation and specification manuals
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
22.02	Removes defective component.	knowledge of manufacturer's component removal procedures knowledge of component construction ability to apply manufacturer's component removal procedures	wrenches, screwdrivers, chisels, punches, sockets, ratchets, vice grips
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV
22.03	Installs component to manufacturer's instructions.	knowledge of manufacturer's installation procedures knowledge of manufacturer's special handling instructions ability to follow manufacturer's installation procedures and instructions	wrenches, files, screwdrivers, chisels, punches, sockets, ratchets, vice grips, manufacturer's installation and specification manuals
	<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> yes yes yes yes	<u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> yes yes yes yes yes yes	<u>NT</u> <u>YK</u> yes NV

	Sub-tasks	Enabling Objectives	Tools & Equipment
22.04	Verifies operation of system.	knowledge of manufacturer's prescribed sequence of operation knowledge of diagnostic equipment knowledge of manufacturer's testing procedures ability to operate diagnostic equipment ability to perform manufacturer's testing procedures	manufacturer's installation and specification manuals, diagnostic equipment
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> no	<u>YK</u> NV

BLOCK I INTERIOR TRIM AND UPHOLSTERY

Task 23 Assesses damages.

Trend: The trend is toward more use of plastic components and computerized electrical systems.

	Sub-tasks	Enabling Objectives	Tools & Equipment
23.01	Inspects interior components visually.	knowledge of vehicle construction knowledge of damage analysis techniques and procedures ability to apply damage analysis techniques and procedures	
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes
	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

	<u>Sub-tasks</u>	<u>Enabling Objectives</u>	<u>Tools & Equipment</u>
23.02	Determines repair procedure.	knowledge of the composition of components types knowledge of repair techniques for component types ability to interpret manufacturer's repair information ability to identify the composition of interior components	shop manuals
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> no	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV

Task 24 Repairs interior component.

Trend: The move is toward improved repair techniques.

	<u>Sub-tasks</u>	<u>Enabling Objectives</u>	<u>Tools & Equipment</u>
24.01	Prepares component for repair.	knowledge of interior construction knowledge of component removal procedures knowledge of component repair techniques ability to identify composition of components by type ability to identify parts to be removed to facilitate repair	shop manuals
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> no	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV

Sub-tasks		Enabling Objectives	Tools & Equipment
24.02	Repairs component.	knowledge of sheet metal repair techniques	plastic repair equipment and material, grinder, shop manuals
		knowledge of plastic panel repair techniques	
		knowledge of refinishing techniques	
		knowledge of parts removal procedures	
		ability to repair sheet metal and plastic components	
		ability to remove components for repair	
		<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> <u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes no yes yes yes yes yes yes NV	
24.03	Prepares component for refinishing.	knowledge of composition of interior components	
		knowledge of preparation techniques	
		ability to prepare component	
		ability to determine refinish process	
		<u>NF</u> <u>NS</u> <u>PE</u> <u>NB</u> <u>PQ</u> <u>ON</u> <u>MA</u> <u>SK</u> <u>AB</u> <u>BC</u> <u>NT</u> <u>YK</u> yes yes yes yes no yes yes yes yes yes yes NV	
24.04	Refinishes component.	knowledge of composition of interior components	refinishing equipment and material
		knowledge of refinishing techniques	
		knowledge of colour matching techniques	

Sub-tasks	Enabling Objectives	Tools & Equipment
	ability to operate refinishing equipment	
	ability to tint paint colours	
<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

Task 25 Replaces interior component.

Trend: More replacement than repair and more modular components.

Sub-tasks	Enabling Objectives	Tools & Equipment
25.01 Prepares interior component for replacement.	knowledge of interior components construction including the instrument panel	
	ability to determine which parts require removal for access to replace component	
<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV
25.02 Removes defective component.	knowledge of vehicle interior construction	shop manuals
	knowledge of instrument panel construction	
	knowledge of removal procedures	
	ability to apply removal procedures	
	ability to interpret shop manuals	
<u>NE</u> yes	<u>NS</u> yes	<u>PE</u> yes
<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
	<u>MA</u> yes	<u>SK</u> yes
	<u>AB</u> yes	<u>BC</u> yes
	<u>NT</u> yes	<u>YK</u> NV

<u>Sub-tasks</u>		<u>Enabling Objectives</u>	<u>Tools & Equipment</u>
25.03	Refinishes component.	knowledge of composition of interior components	refinishing equipment and material
		knowledge of types of refinishing equipment	
		knowledge of refinishing techniques and procedures	
		ability to operate refinishing equipment	
		ability to perform refinishing techniques and procedures techniques	

<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

25.04	Installs component.	knowledge of vehicle interior construction	shop manuals
		knowledge of assembly techniques	
		ability to align interior components	
		ability to interpret shop manuals	
		ability to operate installation equipment	
		ability to install components	

<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

BLOCK J REFINISHING

Task 26 Prepares surface.

Trend: The use of waterborne top coats and primers increasing and the use of high volume/low pressure (HVLP) spray equipment is on the rise.

	Sub-tasks	Enabling Objectives	Tools & Equipment
26.01	Inspects repair area visually.	knowledge of how to inspect repair area ability to inspect repair area	hand sanding equipment, paint identification manuals
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> yes	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV
26.02	Determines refinishing procedure.	knowledge of trim that is interfering with the refinishing procedure knowledge of top coats and substrates knowledge of refinishing procedures ability to remove trim that is interfering with the refinishing procedure ability to determine top coats and substrates ability to determine refinish procedure	paint identification manuals
	<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes
	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes
		<u>MA</u> no	<u>SK</u> yes
		<u>AB</u> yes	<u>BC</u> yes
		<u>NT</u> yes	<u>YK</u> NV

Sub-tasks		Enabling Objectives										Tools & Equipment	
26.03	Cleans surface.	knowledge of operation of surface cleaning equipment										chemical cleaners, rags, trim, razor blades, gloves, goggles, respirators, air blow gun	
		knowledge of use of chemical cleaners and personal safety equipment											
		ability to operate surface cleaning equipment											
		ability to use chemical cleaners and personal safety equipment											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV
26.04	Masks adjacent areas.	knowledge of use of masking materials										masking materials, chemical cleaners, razor blades, dust masks	
		knowledge of paint blending techniques and procedures											
		ability to use masking materials											
		ability to apply paint blending techniques and procedures											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV
26.05	Sands surface.	knowledge of power and manual sanding tools and equipment										masking materials, hand sanding equipment, sanding materials, chemical cleaners, rags, power sanding equipment, razor blades, dust masks, gloves, goggles, respirators	
		knowledge of surface sanding techniques											
		ability to operate sanding tools											

Sub-tasks		Enabling Objectives								Tools & Equipment			
		ability to sand surfaces as determined by refinish procedures											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> no	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
26.06	Mixes primer.	knowledge of metal conditioners								paint identification manuals, rags, primer application equipment, gloves, goggles, respirators			
		knowledge of types of primers and their application											
		knowledge of primer manufacturer's mixing specifications											
		ability to apply metal conditioners											
		ability to identify types of primers and their applications											
		ability to mix and apply primers to manufacturer's specifications											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> no	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
26.07	Applies primer.	knowledge of primer application equipment								masking materials, paint identification manuals, chemical cleaners, rags, primer application equipment, gloves, goggles, respirators			
		knowledge of techniques and procedures for applying primer											
		ability to operate primer applications equipment											
		ability to apply primer application techniques and procedures											
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Sub-tasks		Enabling Objectives	Tools & Equipment
26.08	Performs final sanding.	knowledge of primer dry-through times and guide coats	hand sanding equipment, sanding materials, rags, power sanding equipment (infrared, etc.), razor blades, dust masks, gloves, goggles, respirators, heat drying equipment
		knowledge of final sanding techniques to the requirements of the refinish procedures	
		knowledge of sanding tools, materials and equipment	
		ability to determine primer dry-through times	
		ability to use guide coats	
		ability to use sanding techniques as determined by refinish procedures	
		ability to use sanding tools, materials and equipment	

<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PO</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

Task 27 Applies paint.

Trend: Trend is towards environmentally friendly paints.

Sub-tasks		Enabling Objectives	Tools & Equipment
27.01	Inspects prepared surface visually.	knowledge of visual inspection procedure	paint identification manuals, other paint manufacturer's literature, blow guns, chemical cleaner and rags
		knowledge of paint manufacturer's procedures and specifications	
		ability to inspect prepared surface visually	
		ability to determine paint procedures	

Sub-tasks		Enabling Objectives	Tools & Equipment
27.04	Matches paint.	knowledge of paint tinting techniques knowledge of use of test cards ability to apply paint tinting techniques ability to use test cards	paint identification manuals, other paint manufacturer's literature, strainers, paint application equipment, paint mixing machine, microfiches, paint scales, viscosity cups, paint shaker, measuring sticks, test cards, colour correction light, paint suits, gloves, goggles, respirators, chemical cleaner and rags

<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

27.05	Performs final cleaning procedures.	knowledge of purpose of air blow repair area knowledge of final cleaning equipment knowledge of final cleaning procedures ability to work in final cleaning area safely ability to use final cleaning equipment ability to apply final cleaning procedures	blow guns, tack rags, strainers, gloves, goggles, respirators, paint booth, chemical cleaner and rags
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<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

Sub-tasks		Enabling Objectives	Tools & Equipment								
27.06	Applies top coat.	knowledge of personal protective equipment	paint identification manuals, other paint manufacturer's literature, tack rags, strainers, paint application equipment, viscosity cups, paint shaker, measuring sticks, test cards, paint suits, gloves, goggles, respirators, paint booth								
		knowledge of top coat application procedures using spray equipment and spray booth equipment									
		knowledge of what constitutes a hazardous waste									
		knowledge of waste disposal procedures and methods									
		ability to use personal protective equipment									
		ability to operate spray equipment as well as spray booth equipment to apply different types of top coats									
		ability to identify hazardous wastes									
		ability to dispose of hazardous wastepaint									
<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV

BLOCK K DETAILING

Task 28 **Assesses detailing requirements.**

Trend: Consumers are more quality-conscious.

Sub-tasks		Enabling Objectives								Tools & Equipment			
28.01	Unmasks vehicle.	knowledge of unmasking procedures											
		ability to perform unmasking											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	NV
28.02	Reviews work order.	knowledge of work order detailing requirements											
		ability to read and comprehend written information											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	no	yes	no	yes	yes	yes	yes	NV
28.03	Determines detailing procedure.	knowledge of detailing sequence											
		ability to determine sequence for detailing											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Task 29 Performs detailing procedure.

Trend: Consumers are more quality-conscious.

Sub-tasks		Enabling Objectives	Tools & Equipment									
29.01	Prepares for detailing.	knowledge of preparation procedure required for detailing	power polishers, corrosion prevention equipment, power									

Sub-tasks		Enabling Objectives									Tools & Equipment		
													washer, soap, applicator and chamois
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
29.02	Installs trim and accessories.												power polishers, corrosion protection equipment, power washer, soap, applicator and chamois
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> yes	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
29.03	Polishes vehicle.												power polishers, corrosion protection equipment, power washer, soap, applicator and chamois
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> no	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV
29.04	Cleans vehicle.												power polishers, power washer, soap, applicator and chamois
		<u>NF</u> yes	<u>NS</u> yes	<u>PE</u> yes	<u>NB</u> yes	<u>PQ</u> yes	<u>ON</u> yes	<u>MA</u> no	<u>SK</u> yes	<u>AB</u> yes	<u>BC</u> yes	<u>NT</u> yes	<u>YK</u> NV

Task 30 Performs final inspection.

Trend: No apparent trend.

Sub-tasks		Enabling Objectives								Tools & Equipment			
30.01	Inspects vehicle visually.	knowledge of faults to look for when inspecting vehicle											
		ability to locate faults											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV
30.02	Conducts road tests on vehicles.	knowledge of road-test procedures											
		ability to perform visual inspection											
		ability to determine imperfections											
		ability to test-drive to determine road worthiness											
		<u>NF</u>	<u>NS</u>	<u>PE</u>	<u>NB</u>	<u>PQ</u>	<u>ON</u>	<u>MA</u>	<u>SK</u>	<u>AB</u>	<u>BC</u>	<u>NT</u>	<u>YK</u>
		yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	NV

